

**COURSE TITLE: ENGR 272 Digital Logic Design Lab**

**CREDITS: 1**

**ROOM: IA-215**

**CRN: 26951**

**LECTURE/RECITATION: (ENGR 271)**

**LABS: Monday 12:00 to 1:50 pm**

**INSTRUCTOR: Craig Munsee**

**EMAIL: [munseec@linnbenton.edu](mailto:munseec@linnbenton.edu)**

**OFFICE: IA-206**

**OFFICE HOURS (Additional time you can ask Questions): (Zoom Meeting)**

**Wednesday Noon - 12:50 pm**

**Thursday Noon - 12:50 pm**

**Friday Noon - 12:50 pm**

**Others by Appointment**

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**Course Description:**

- Laboratory to accompany ENGR 271 Digital Logic Design. Illustrates topics covered in the lectures of ENGR 271 using computer-aided design, verification tools, and prototyping hardware.

**Prerequisite(s):**

- Corequisite: Concurrent enrollment in ENGR 271.

**Course Outcomes:**

- Upon successful completion of this course, students will be able to:
  1. Analyze and design combinational systems using standard gates and minimization methods.
  2. Analyze and design combinational systems composed of standard combinational modules, such as multiplexers and decoders.
  3. Analyze and design simple synchronous sequential systems.
  4. Analyze and design sequential systems composed of standard sequential modules, such as counters and registers.
  5. Analyze and design simple systems composed of programmable logic devices.

### Text Book:

- **Digital Design and Computer Architecture, ARM Edition.** Authors: Sarah Harris David Harris or Digital Design and Computer Architecture, 2nd Edition. Authors: Sarah Harris David Harris.
- **Digital Design and Computer Architecture: ARM Edition, is available for free to the students through the LBCC Library's Ebook Central database.** <http://bit.ly/digides>

### Laboratory:

Each lab report will be graded on conformance with specific criteria, which will be reviewed during the first week's lab session. Lab reports are due for grading at the beginning of the next lab, with dates indicated in Moodle.

Links to the experimental procedures can be found on the course schedule, and should be reviewed carefully before coming to lab.

### Grading:

Assignment:	Number:	Percentage:
Labs	5	100%

- 90-100% A, 80-89.9% B, 70-79.9% C, 60-69.9% D, < 59.9% F

### Holidays:

- Veterans Day: LBCC will be closed (**Thursday, Nov 11, 2021**)
- Thanksgiving: LBCC will be closed (**Thursday, Nov 25, 2021 and Friday, Nov 26, 2021**)

### Class Climate Survey:

- Student feedback is important to improve this course and to help the instructor know how to adjust teaching methods. Your feedback is taken seriously and does influence future versions of the course. The evaluations are anonymous, and links to the evaluations will be emailed to your student LBCC email account after the 5<sup>th</sup> week of the term. I encourage you take this opportunity to provide constructive feedback on the class. Thank you in advance for your input!
- **Extra Credit will be given for those who completing the Class Climate Survey.** Since the survey is anonymous you are asked to attach a screen shot showing that you completed the survey (Not a screen shot of your answers). A place to turn this in can be found on week 7 of Moodle.

### Academic Integrity:

- You are expected to turn in your own work and not take credit for the work of others.
- For Homework and Lab assignments, you may work together and discuss the problems with your classmates, but you are expected to turn in your own work. If you turn in something that is not your work, it is considered cheating (This includes copying and sharing computer files).
- **Depending on the severity of the incident, those caught cheating and those who aid them will receive a score of zero for that assignment or fail the class and will be reported to Jill Childress, Ed. D. | Manager, Student Conduct and Retention.**

## **Computer & Software Requirements:**

- You will need a computer capable of running the Quartus Prime Lite software, ModelSim and programming the DE10-Lite FPGA. There is only a Windows and Linux version available for Quartus Prime Lite.
  - Quartus Prime Lite
  - <https://fpgasoftware.intel.com/?edition=lite>
- To use a Mac computer, a windows environment would need to be installed on the computer to run the software (Oracle's VirtualBox).
  - <https://www.virtualbox.org/>
- You should install these programs the first week to determine if your computer can run the programs correctly.
- If you are considering purchasing a new computer, I would recommend a Windows-based Laptop with an Intel i7 processor, 16 GB of RAM, and at least a 500 GB hard drive. MacOS computers are good computers too but are limited when it comes to compatibility for Engineering software.

## **College Policies**

### **COVID-19 CLASSROOM REQUIREMENTS FOR ALL STUDENTS AND FACULTY**

Linn-Benton Community College has established rules and policies to make the return to the classroom as safe as possible. It is required for everyone to follow all of the campus rules and policies. To participate in this class, LBCC requires all students to comply with the following:

<https://www.linnbenton.edu/about-lbcc/college-services/safety/covid19/index.php>

### **MASKS REQUIRED AT ALL TIMES IN CLASSROOM**

Wear a mask or face covering indoors at all times. Your mask or face covering must be properly worn (fully covering nose and mouth and tight-fitting). Mesh masks, face shields, or face covering that incorporates a valve designed to facilitate easy exhalation are not acceptable. If you have a medical condition or a disability that prevents you from wearing a mask or cloth face covering, you must obtain an accommodation from CFAR (Center for Accessibility Resources) to be exempt from this requirement. State guidelines do not limit class size. Physical distancing accommodations can be made upon request and cleaning supplies are also available for personal use.

### **TESTING RESOURCES**

We are also so pleased to announce that FREE TESTING for Covid-19 will be available for students and employees at our Albany Main Campus (located at the Campus Bookstore's book-buy-back window by the Business Office); the Health Occupations Center in Lebanon, and the Benton Center in Corvallis, beginning next week and continuing throughout the term. LBCC will have access to the results and they will be used for contact tracing purposes only. Use of the testing facility is also not mandatory, but is being provided as a resource for individuals who may wish to get tested.

### **AVAILABILITY OF DISPOSABLE MASKS, N95 MASKS, CLEANING SUPPLIES, ETC.**

If you've accidentally forgotten your mask, LBCC will have supplies available throughout our campus locations and high-traffic areas. In addition, if you would like to request an N95 mask, the college will have a limited supply available and we will do our best to accommodate you. Cleaning supplies will also be made available for staff who request them. Please visit the Facilities Office for special supply requests, or visit one of these locations where general supplies will be available.

## **WHERE TO REPORT A POSITIVE CASE OF COVID AND HOW TO KNOW IF YOU NEED TO QUARANTINE**

In the event of a positive diagnosis of coronavirus, we appreciate your support in reporting it to our Office of Finance and Operations by contacting [floms@linnbenton.edu](mailto:floms@linnbenton.edu). College administration will then work with local health authorities to begin contact tracing, and others who may have been exposed will be notified. The identity of the individual or individuals infected will be kept confidential, but you will be informed if a quarantine is necessary. If you are not informed about a close contact, you do not need to quarantine.

### **Drop/Withdraw Policy:**

If you are withdrawing from the class, you must file a Schedule Change Form with Registration or use WebRunner. If you formally drop the class **before Monday of the second week of the term**, you will receive a tuition refund. If you withdraw after the Monday of the second week of instruction through the seventh week a ‘W’ will show up on your transcript. **No withdrawals are allowed after the end of the seventh week**. An instructor may not assign a “W” grade.

If you received financial aid or veteran’s benefits, PLEASE talk with associates at the appropriate office to determine what effects on eligibility dropping a course will have. Don’t jeopardize your eligibility!! You can contact the Financial Aid Office by calling (541) 917-4850 or by visiting the Financial Aid Office in Takena Hall.

If you stop attending the course without formally withdrawing you will continue to accumulate grades (zeroes for all assignments not turned in) and will receive the grade assigned by the instructor. You will also be held accountable for all charges on your account.

### **Center for Accessibility Resources (CFAR):**

You should meet with your instructor during the first week of class if:

1. You have a documented disability and need accommodations.
2. Your instructor needs to know medical information about you.
3. You need special arrangements in the event of an emergency.

If you have documented your disability, remember that you must make your request for accommodations through the Center for Accessibility Resources Online Services web page every term in order to receive accommodations. If you believe you may need accommodations but are not yet registered with CFAR, please visit the CFAR website at <http://www.linnbenton.edu/cfar> for steps on how to apply for services or call 541-917-4789 or [cfar@linnbenton.edu](mailto:cfar@linnbenton.edu).

### **LBCC Comprehensive Statement of Nondiscrimination**

LBCC prohibits unlawful discrimination based on race, color, religion, ethnicity, use of native language, national origin, sex, sexual orientation, gender, gender identity, marital status, disability, veteran status, age, or any other status protected under applicable federal, state, or local laws. For further information see Board Policy 1015 in our Board Policies and Administrative Rules. Title II, Title IX (employee cases), & Section 504: Scott Rolen, Director of Human Resource Development and Support, CC-108, 541-917-4425; Title IX (student cases): Jill Childress, Manager for Student Conduct and Retention, WH-215, 541-917-4806, LBCC, Albany, Oregon. If you feel you have been discriminated against in any interaction at Linn-Benton Community College, or have been harassed by another person while at LBCC, or wish to report any concern or complaint, please navigate to this page to make a report: [linnbenton.edu/report-it](http://linnbenton.edu/report-it). This and additional information can be found at

<https://www.linnbenton.edu/about-lbcc/administration/policies/equal-opportunity.php>.

**Know your rights and responsibilities:**

LBCC students have rights: the right to free speech, the right to assemble, the right of a free press, etc. LBCC students also have responsibilities to their community: the responsibility to participate and engage in class, the responsibility to advocate for their needs (ask for help), the responsibility to support a respectful teaching and learning environment, the responsibility to treat all persons with respect, the responsibility to be truthful and honest in all work and communications, and the responsibility to follow staff directions, local, state, and federal laws.

Rights and responsibilities balance together to create the best learning environment. For example, while you have free speech in the café or courtyard, in class the instructor decides whose turn it is to talk and what the topics for conversation will be. Students are free to believe what they believe, but instructors may require students to learn and recite concepts, principles, or theories for a class even if the student does not believe those concepts. You play a role in creating a positive community at LBCC.

Please review your rights and responsibilities (<http://linnbenton.edu/go/studentrights>).

If you believe a student is violating your rights, ask to be treated with respect. If that does not cure the situation, report to Associate Dean Dr. Lynne Cox, Takena Hall Rm. 107. If you believe a faculty member or LBCC employee is violating your rights, please report to Human Resources, Scott Rolen, Calapooia Center Rm. 108.

**Student Resources:**

LBCC has many resources to help our students be successful and overcome difficulties so that you can focus on learning. If you have a need, please contact your advisor for assistance and they can help direct you to the services you need. A list of some of these resources can be found in Aviso or the link below. <https://linnbenton.avisoapp.com/aviso/app/resourceGuide/index>

**Changes to the Syllabus**

I reserve the right to change the contents of this syllabus due to unforeseen circumstances. You will be given notice of relevant changes in class, or through LBCC e-mail.